APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,704	11/07/2001	Bernd J.W. Mathiske	SUN-P6316-RSH	5646

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EXAMINER
MANOSKEY, JOSEPH D

ART UNIT	PAPER NUMBER
2113	

DATE MAILED: 05/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/039,704	MATHISKE ET AL.
	Examiner	Art Unit	
	Joseph D. Manoskey	2113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _07 March 2005_.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-27_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-27_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _07 November 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   The examiner notes that the RCE filed on 07 March 2005 asked for the

amendment filed on 28 January 2005 to be considered. There is no amendment filed

on 28 January 2005. The examiner assumes that this was a minor typographical error

and that applicant wishes for the most recently filed amendment, 31 January 2005, to

be filed to be considered for the RCE. Therefore for purposes of further examination

the examiner will consider the amendment filed on 31 January 2005.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over by

Litzkow et al., "Checkpoint and Migration of UNIX Processes in the Condor Distributed

Processing System", hereinafter referred to as "Litzkow", in view of Croix, U.S. Patent

Application Publication 2002/0100034.

4.   Referring to claims 1, 10, and 19, Litzkow teaches checkpointing using a library

that is re-linked but not re-compiled to include this library, this is interpreted as

dynamically linking a library into the application during a run-time invocation of the

application, wherein the run-time invocation occurs after the application has been

compiled and linked (See page 1, section 1). Litzkow also teaches providing new

versions of system calls to record information from the calls, this is interpreted as the

library being an interceptor library (See page 5, section 3.4.1). Litzkow discloses new

versions of calls that have the same as the calls by the application, thus intercept the

function calls, and record the information, this is interpreted as intercepting the function

calls and recording parameters to create a checkpoint (See page 5, section 3.4.1). The

new functions then call the actual routine, thus making the function call (See page 5,

section 3.4.1). Finally the interception is done using new versions of the function calls

they receive the return value of the actual function call and then return it, thus

forwarding the result of the function call back to the application (See page 5, section

3.4.1).

Litzkow does not teach the use of environment variables for setting the use of the

dynamically linked interceptor library and does not teach the use of function pointers to

refer to function calls, however Litzkow does teach re-linking but not re-compiling, this is

interpreted as dynamically linking and Litzkow discloses the desire to be transparent to

user code (See page 1, section 1 and 2). Croix discloses the use of shared objects and

dynamic link libraries for calls and callbacks that can be selected by the user via

environment variables (See page 2, paragraph 0027 and page 3-4, paragraph 0040).

Croix also teaches the use of function pointers for making the calls and callbacks (See

page 4, paragraph 0047). It would have been obvious to one of ordinary skill in the art

at the time of the invention to combine the environment variables and function pointers

of Croix with the dynamic linking of Litzkow. This would have been obvious to one of

ordinary skill in the art at the time of the invention to do because it allows the advantage

to extended through the use of third programs such as plug-ins (See Croix, page 2,

paragraph 0027).

5.   Referring to claims 2, 11 and 20, Litzkow and Croix teach all the limitations (See

rejection of claims 1, 10, 19) including the application being interrupted, this interpreted

as stopping the application (See Litzkow, page 7, section 4). Litzkow also teaches the

checkpoint being saved to stable storage using the file system, this is interpreted as

retrieving the recorded parameters and saving the checkpoint data to secondary

storage (See Litzkow, page 1, section 2). Finally the user code resumes where it left

off, thus "resuming the application" (See Litzkow, page 7, section 4).

6.   Referring to claims 3, 12, and 21, Litzkow and Croix disclose all the limitations

(See rejection of claims 2, 11, and 20) including restoring the process's state, this is

interpreted as using the checkpoint to restore the application (See Litzkow, page 2,

section 2).

7.   Referring to claims 4, 13, and 22, Litzkow and Croix teach all the limitations (See

rejection of claims 2, 11, and 20) including the checkpoints being stored in stable

storage, this is interpreted as saving the checkpoint data to a persistent storage (See Litzkow, page 1, section 2).

8.   Referring to claims 5, 14, and 23, Litzkow and Croix disclose all the limitations (See rejection of claims 2, 11, and 20) including saving the checkpoint data in stable storage using the file system, this is interpreted as saving the checkpoint data in a file system, or a database (See Litzkow, page 1, section 2).

9.   Referring to claims 6, 15, and 24, Litzkow and Croix teach all the limitations (See rejection of claim 1, 10, and 19) including using a "syscall()" to call the actual function, this is interpreted as making the function call involves referencing the function through a function pointer (See Litzkow, page 6, section 3.4.1).

10.   Referring to claims 7, 16, and 25, Litzkow and Croix disclose all the limitations (See rejection of claim 1, 10, and 19) including saving the stack and data in the checkpoint file, this is interpreted as recording results of the function call to facilitate creating a checkpoint that includes information about the results of the function call (See Litzkow, page 7, section 4).

11.   Referring to claims 8, 17, and 26, Litzkow and Croix teach all the limitations (See rejection of claim 1, 10, and 19) including the function calls including system calls and library routines, "lib calls" (See Litzkow, page 5, section 3.4.1).

12.   Referring to claims 9, 18, and 27, Litzkow and Croix teach all the limitations (See

rejection of claim 1, 10, and 19) the checkpoint file containing pathname of the file (See

Litzkow, page 7, section 3.4). Litzkow also discloses stack, data, and shared library

information in the checkpoint, this is interpreted as thread flags and timer-thread

relationships (See Litzkow, page 7, section 4).

Response to Arguments

13.   Applicant's arguments, see pages 8 and 9, filed 31 January 2005, with respect to

the rejection(s)of claim(s) 1-27 under 35 U.S.C. 102(b) have been fully considered and

are persuasive. Therefore, the rejection has been withdrawn. However, upon further

consideration, a new ground(s) of rejection is made in view of newly found prior art, see

above rejection.

Conclusion

14.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Joseph D. Manoskey whose telephone number is (571)

272-3648. The examiner can normally be reached on Mon.-Fri. (7:30am to 4pm).

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Robert Beausoliel can be reached on (571) 272-3645. The fax phone

number for the organization where this application or proceeding is assigned is 703-

872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

JDM
May 5, 2005

ROBERT BEAUSOLIEL
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